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M20 image courtesy of Jerry Pinter, taken with a homemade 18" dob, Canon EOS 20dA, w/*ServoCAT*

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Pretty Little Patriot

By "Uncle" Rod Mollise

They laughed when I set my telescope up on the star party field. I thought they would, anyway but not at me. No, what I imagined would cause laughter was not the sight of a broken-down hillbilly wrestling way too much gear from vehicle to field, but the telescope said hillbilly was wrestling. I'm talking about the William Optics ZenithStar 66 SD Patriot Edition, pards; and, believe you me, you've never seen a scope like this one.

But I'm gettin' way ahead of the story in typical Uncle Rod fashion. Let's turn back the clock a few months to an afternoon when a box appeared in the front hall of Chaos Manor South – Rod's humble abode. This box was emblazoned with the swan logo familiar to fans of Taiwanese telescope maker William Optics, and that spelled astro stuff. Ain't nothin' Your Ol' Uncle likes better than diggin' into new gear, so pretty soon Styrofoam peanuts were flying everywhere.

What was revealed when the dust settled was William Optics' 66-mm ZenithStar APO refractor. I receive my fair share of gear to evaluate, and I'll admit I've become a bit blasé about yet another shipment from some astro-peddler. But this time my interest was piqued. You see, despite my well-known penchant for SCTs, I've always acknowledged the value of small wide field refractors. They are just so dad-gummed useful – for everything from wide field viewing, to piggyback imaging, to guiding.

I've owned and loved a Short Tube 80 refractor for years. At one time, these f/5 achromats were the darlings of the amateur astronomy community. Not just the amateur "chattering classes", either, but rank and file amateurs who actually get out and use telescopes. The ST80 was everywhere for a while, riding piggyback on everything from C8s to 30-inch Dobsonians. Popularity does not a good scope make, however.

Yeah, unfortunately, when you came down to it, the main thing the ST80 had going for it was its price (two hundred bucks). Other than that, it had a usually acceptable objective, a usually acceptable focuser, and it produced usually acceptable images. Unfortunately, though, "acceptable images" meant you had to be willing to accept lots of the color purple visually and in images. Mightn't there be something better, though: a wide field apochromatic (apo, color free) refractor that didn't break the bank, but which improved on the ST80 optically and mechanically; or a telescope that didn't recall Revenge of the Purple People Eaters every time you took a gander at the Moon? For quite a while, the answer was, "no."

"No," until recently, when reasonably priced apos suddenly began to flow into the hands of U.S. amateurs from Taiwan – notably from William Optics (WO). These new refractors, most of which were two-element ED glass affairs, were said to not just banish color, but to do it with style and with build quality that left the pore ol' 80 in the dust. The natural WO scope for me to gravitate to as a "Short Tube 80 Killer" was the runt of the litter, the 66 SD, which initially sold for less than 400 bucks (they can now be had for a hundred dollars less with no finder or diagonal). "SD," by the way, as I understand refractor lingo, means the same thing as "ED." That is, glass with special dispersion properties that help it reduce the color that devils achromats.

When I pulled the 66 from its box, my first surprise was that it came with a nice aluminum case emblazoned with the WO logo and filled with good (if somewhat ill-smelling) die-cut foam. This was certainly nicer than the aluminum "tool attaché" I bought for the ST80, but it's what's inside that counts, ain't it? What was inside was a beautifully finished, little black-tube refractor with a retractable dew shield, a built in "L" shaped mounting bracket ($\frac{1}{4}$-20tpi), and one heck of a focuser.

William Optics' trademark Crayford focuser is an attractive, gloss-finished affair that's equipped with nice-sized knobs, operates with buttery smoothness, and is easily adjusted for the proper amount of tension to handle heavy payloads (it does fine with my SBIG ST2000 CCD). But that's not what

really catches your eye. What gets your attention is a smaller knob centered on the right focus knob. This yields 10 to 1 reduction for fine focusing. The action of this slow speed control is even smoother than the course-focus, and is a real boon for higher power use and, especially, imaging.

One other thing I liked about the WO focuser was that it's rotatable. Loosen a set-screw, and you can rotate the focuser to change eyepiece or camera angle. Like slow speed focus, this is a feature that was formerly unknown in telescopes in this price range.

Focusers are cool, but what good is a focuser if the objective brings back that moldy-oldie "Purple Haze"? Let's pull the gold-colored lens cap off and take a look at what's up front – an f/5.9 doublet objective with an FPL-53 "fluorite" glass element. What you'll actually see is this: not much. The lens is coated with WO's STM formulation, and these multi-coatings tend to make the glass disappear. The cell this objective sits in is not adjustable, but I've yet to hear of one of these scopes arriving miscollimated or needing collimation later. Stuff happens, of course, and one of the reasons to buy the WO 66 rather than a similar scope is support. If you have trouble, WO will fix it in hassle-free fashion.

Let's do the flashlight test. Yeah, I know I tell y'all not to point a bright, oblique light at a lens or mirror—it just serves to make 'em look horrible, usually. But do as I say, not as I do. Anyway, even in the glare of a flashlight, the WO objective looked very fine. The bright light also served to illuminate the tube interior, revealing a series of baffles designed to keep stray reflections at bay. These are real baffles, incidentally, not the not-so-hot foam baffles WO used way-back-when in their original Megrez 80-mm achromat.

Specifics aside, what was my general impression? Just this: that the scope was both pretty and solid. The tube, a nicely finished black (that unfortunately showed fingerprints very easily), was built like a little tank, coming in at a surprising 3.5 pounds, which is about the same as the larger-aperture Short Tube 80. "Pretty" is good, sure, but how would she do under the stars?

"New scope curse"? It's real, boys and girls. It was weeks before I got a chance to tote this elegant-lookin' little scope out to my club's dark site near the metropolis of Tanner-Williams, Alabama. It was a muggy evenin', just as you'd expect in late August down on the Gulf Coast. Nevertheless, the Milky Way was dramatic away from Mobile's light-dome, and the burnished stars of summer beckoned in the heavy air. I wasted no time getting the wee scope setup.

Which brings up an important question: what do you set the 66 on? There are plenty of options. I've used a heavy duty Manfrotto camera tripod, and I'm sure the scope would be great on William Optics' EZ-Touch alt-az mount. But I chose to place the Zenithstar on my Celestron CG5 mount. Not only did this provide an absolutely rock-solid platform for the refractor, but it also gave me go-to and would, I hoped, allow me to do some deep sky imaging.

Was there anything I was worried about regarding the 66? Well, yes: A-P-E-R-T-U-R-E. I've long preached "aperture always wins," and 66 mm, 2.6 inches, just ain't much. It turns out this is not a huge concern, however. If you you're okay with what a Short Tube 80 can show, you'll be happy with what you see in the 66. Anything I could see in an ST80, I could see in the 66 SD, and, thanks to the higher quality optics, I was usually seeing it better.

One of the things I disliked about the ST80 was the difficulty it had with globular clusters. No matter how high I pushed the magnification, it was unable to resolve stars

WILLIAM OPTICS ZENITHSTAR 66 SD APO PATRIOT EDITION

Aperture	**66 mm**
Focal Ratio	**f/5.9**
Focal Length	**388 mm**
Objective Type	**SD Doublet, Air Spaced, Fully Multi-Coated**
Resolving Power	**1.78"**
Limiting Magnitude	**10.8**
Lens Shade	**Retractable**
Focuser	**1.6" (40.6 mm) Dual Speed Crayford, 1:10 Fine Focus** **63 mm (2.5") Focuser Travel Length** **Rotatable Focuser Design** **Accepts 2" SCT diagonal for 2" accessories** **2" adapter available for astrophotography**
1.25" Adapter	**Brass Compression Rings**
Field Stops	**10 Baffles**
Tube Diameter	**2.95" (75 mm)**
Tube Length	**11.8" (300 mm) Fully Retracted** **14.2" (360 mm) Fully Extended**
Tube Weight	**3.5 lbs. (1.61 kg)**
Case	**Aluminium Case (Standard)**
Case Dimensions	**(WxHxD) 15" x 9.6" x 6.5" (38.5 cm x 24.5 cm x 16.5 cm)**
Case Weight	**3.5 lbs. (1.6 kg)**

in anything other than bright, loose M22. What about the ZenithStar 66? When I ran the power up (and she didn't mind 150x or 200x), a few stars were revealed in M13 and M15, two of the tougher globs for little-bitties.

"Hold on just a cotton-pickin' minute, Unc' Rod. Dim glob stars are nice, but what we want to know about is bright stars!"

I don't blame you. Yes, it's true the gurus will say you need a three-element objective to really banish color. Maybe so, but the ZenithStar 66 did a fine job in that regard nevertheless. I suspect its small aperture and "reasonable" focal ratio help, but the bottom line is that in-focus stars did not show that dreaded purple tinge. Some users have reported a little red on one side of focus and green on the other, but, in-focus or out-of-focus, no spurious color did I see. At most, I could occasionally detect evidence of a subdued "halo" around bright stars, but it was colorless to my eyes.

The little scope handled a 2-inch diagonal easily, and when I used high-quality eyepieces, Uwans and Naglers, I was amazed at how good and flat that wide field looked. Yeah, out at the edge, stars were puttin' on weight, but they did not morph into seagulls. The easiest way to rig a 2-inch diagonal to the 66, by the way, is to use its SCT threads. That's right: you can unscrew the 1.25-inch adapter from the focuser to reveal SCT threads. You can then attach any standard Schmidt-Cassegrain accessory – like an SCT diagonal – to the ZenithStar. That's a nice feature for us SCT fans.

How about the Moon? I thought you'd ask, so I waited for a fat ol' Moon to rise and set the 66 on her. The terminator was sharp and color free. Oh, when I placed my eye off axis and held my mouth just right I could see a fairly subtle yellow line along the limb, but this was neither a distraction nor a problem. I was impressed enough by the scope's performance on Luna to hang a webcam off her rear and shoot some frames when the next Lunation came 'round. I think you'll agree she done good based on the image here. I had hoped to shoot some

deep sky junk with the ST2000, but, alas, the storms of winter meant that was not to be. Keep an eye on my blog (http://uncle-rods.blogspot.com/), though; as soon as I get some deep space images, I'll post them there.

Wait a minute. Tarnation, I'm forgettin' the reason I came here in the first place: to tell y'all about the new 66 SD Patriot Edition. One day I was mindin' my own business when the computer chirped to alert me of an incomin' email. It was from the folks at WO. Seemed they wanted me to have a look at a "different" 66. A special 66. Being a curious sort, I couldn't resist saying, "Hail yeah!"

What this little charmer turned out to be was the William Optics ZenithStar 66 SD APO Patriot Edition, the "Patriot 66", the scope pictured on the opposite page. Yeah, some might call her gaudy, but I call her be-yoo-ti-ful. I needn't have worried about the reaction of my fellow star partiers, either. I didn't hear any laughter; everybody who saw the little thing responded with, "I want one!"

Yeah, I said be-yoo-ti-ful! As you can see, the standard 66 has been decked out in red, white, and blue finery. Now, admittedly, Your Old Uncle is a veteran and basically a patriotic kinda guy, but I think a lot of people are gonna like this little apochromat for her smashing good looks. Think fireworks; think cool '60s pop art; think Fourth of July and Yankee Doodle Dandy! Underneath the snazzy paintjob, the Patriot is the same good 66 SD as before.

Let me caution you, though. If you think you want a Patriot, get one now. This is a limited edition, as WO is planning on doing no more than 100 "copies". If you hurry up, you may even be in time to get one with your state's name engraved on the focuser. Further, the good people at William Optics, who've expressed a great deal of concern about the devastation wreaked on Uncle Rod's part of the country by Hurricane Katrina, are donating a substantial amount from each sale to the American Red Cross. Beautiful, unique scope; great cause; how the h-e-c-k can you go wrong? ATT

Portion of Limited Edition Patriot Sales to Support Red Cross

William Optics is donating a portion of the proceeds of each ZenithStar 66 SD APO Patriot Limited Edition scope sold. They are selling 50 scopes with special USA engraving and 50 scopes with individual state engraving.

"With so much suffering and destruction around the world, we felt that the Red Cross is a respected, non-partisan organization involved in worthy activities such as disaster relief and nursing. By widely-recognized standards, it is one of the organizations that uses its fund in the most efficient way to help the others," said William Yang, president of William Optics. "By supporting the Red Cross, William Optics does not want to change the world, it wants to make a first small step in order to show that helping others is a worthy cause which has the attention of a socially-attentive company."

For more information about the Patriot go to www.williamoptics.com. To find out how to support the American Red Cross go to www.redcross.org.